

Victorian Certificate of Education  
2008

**SUPERVISOR TO ATTACH PROCESSING LABEL HERE**

STUDENT NUMBER

[illegible]

## Letter

# PSYCHOLOGY

## Written examination 1

**Thursday 12 June 2008**

**Reading time: 9.00 am to 9.15 am (15 minutes)**

**Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)**

**QUESTION AND ANSWER BOOK**

## Structure of book

Section	Area of study	Number of questions	Number of questions to be answered	Number of marks
A	1. Brain and nervous system	18	18	18
	2. Visual perception	13	13	13
	3. States of consciousness	13	13	13
B	1. Brain and nervous system	7	7	18
	2. Visual perception	5	5	14
	3. States of consciousness	5	5	14
				Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

## Materials supplied

- Question and answer book of 19 pages.
- Answer sheet for multiple-choice questions.

## Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

### At the end of the examination

- place the answer sheet for multiple-choice questions inside the front cover of this book.
- At the end of the examination**

**Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.**

## SECTION A – Multiple-choice questions

## Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions. Choose the response that is correct or that best answers the question.

A correct answer scores 1; an incorrect answer scores 0.

Marks will not be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

## AREA OF STUDY 1 – Brain and nervous system

### Question 1

The two hemispheres of the brain are connected by

- A. the cerebral cortex.
- B. the corpus callosum.
- C. a deep fissure that separates all the nerve fibres.
- D. a small strip of tissue with no neurons

## Question 2

The main function of the corpus callosum is to

- exchange neurons between hemispheres.
- process information from both hemispheres.
- protect the brain from injury.
- transfer information from one hemisphere to the other.

### Question 3

Which one of the following statements about the human adult brain is correct?

- The adult brain weighs around 500 g.
- The brain is divided into sections, each of which has one specific function.
- The brain's cerebral cortex is folded to increase cortical surface area.
- The brain is responsible for many bodily functions but not body temperature.

### Question 4

If you suffered a stroke that caused damage to the temporal lobe, the task that you would probably find most difficult would be

- A. recognising the face of a work colleague.
- B. fitting an object into a space.
- C. feeling the sharpness of a needle.
- D. making decisions about your future.

**Question 5**

A person suffers from a condition in which they do not acknowledge the existence of the left half of their body and their environment.

This is a condition that is most commonly associated with damage to the

- A. parietal lobe of the right hemisphere.
- B. parietal lobe of the left hemisphere.
- C. frontal lobe of the right hemisphere.
- D. frontal lobe of the left hemisphere.

**Question 6**

Major functions of the frontal lobe generally include

- A. visual perception, speech production and motor control.
- B. controlled reasoning, memory and personality.
- C. logical thinking, motor control and speech production.
- D. motor control, abstract reasoning and language comprehension.

**Question 7**

Research involving the recognition of emotions has shown that usually

- A. only the right hemisphere is involved.
- B. only the left hemisphere is involved.
- C. the right hemisphere is more involved than the left hemisphere.
- D. the left hemisphere is more involved than the right hemisphere.

**Question 8**

In positron emission tomography (PET) scans, a substance is tagged with a radioactive marker and then monitored.

This substance is a form of

- A. iodine.
- B. kryptonite.
- C. uranium.
- D. glucose.

**Question 9**

A PET scan provides information

- A. in very high resolution pictures that show brain structure and function.
- B. in a colour-coded map that reveals areas of high activity in the brain.
- C. about abnormalities in the structure of the brain.
- D. about the number of cognitive tasks that were performed correctly.

**Question 10**

Which procedure results in a high-quality three-dimensional picture of the brain?

- A. functional magnetic resonance imaging (fMRI) scan
- B. electrical stimulation of the brain (ESB) scan
- C. positron emission tomography (PET) scan
- D. electroencephalograph (EEG) scan

**Question 11**

Which two procedures allow researchers to view changes in brain activity over time?

- A. positron emission tomography (PET) scan and computerised tomography (CT) scan
- B. positron emission tomography (PET) scan and functional magnetic resonance imaging (fMRI) scan
- C. magnetic resonance imaging (MRI) scan and functional magnetic resonance imaging (fMRI) scan
- D. computerised tomography (CT) scan and magnetic resonance imaging (MRI) scan

**Question 12**

The parietal lobe contains

- A. the motor cortex.
- B. the somatosensory cortex.
- C. Broca's area.
- D. Wernicke's area.

**Question 13**

Which one of the following is controlled by the somatic nervous system?

- A. breathing
- B. blood pressure
- C. decision making
- D. skeletal muscles

**Question 14**

Which of the following responses is **not** produced by the sympathetic nervous system?

- A. relaxation of the airways
- B. slowing of digestion
- C. an increase in the production of saliva
- D. dilation of the pupils

**Question 15**

Aidan has acquired damage to the Broca's area of his brain. As a result, he suffers from Broca's aphasia.

His speech

- A. makes sense but is slow and deliberate.
- B. does not make sense and tends not to include nouns and verbs.
- C. makes sense but is interrupted with constant stuttering.
- D. does not make sense but includes 'function words' such as 'a' and 'the'.

**Question 16**

Following split-brain surgery, an individual would have difficulty naming an object that he briefly saw in the left visual field because while the \_\_\_\_\_ hemisphere 'saw' the object, naming tasks are usually under the control of the \_\_\_\_\_ hemisphere.

- A. right; left
- B. left; right
- C. dominant; nondominant
- D. nondominant; dominant

**Question 17**

The nervous system that consists of the somatic and autonomic nervous systems is the \_\_\_\_\_ nervous system.

- A. central
- B. skeletal
- C. peripheral
- D. sympathetic

**Question 18**

Before performing research, the researcher must weigh up the potential risks to the participants and the potential benefits to society.

This ethical consideration is known as

- A. beneficence.
- B. integrity.
- C. justice.
- D. respect for persons.

**AREA OF STUDY 3 – States of consciousness****Question 32**

A state of deep relaxation such as meditation is likely to produce

- A. a lowered heart rate.
- B. body tremors.
- C. an increased galvanic skin response (GSR).
- D. a significant increase in body temperature.

**Question 33**

An alcohol-induced state could be called an altered state of consciousness because the individual

- A. would be fully aware of their surroundings.
- B. can control the amount of alcohol they drink.
- C. may be unable to control their emotions.
- D. will probably be able to judge time.

**Question 34**

Sue is sitting at her desk working on some complex mathematical questions.

An electroencephalograph (EEG) would most likely show \_\_\_\_\_ brain waves.

- A. alpha
- B. beta
- C. theta
- D. delta

**Question 35**

Which of the following statements is true of the sleep cycle in a typical night's sleep for an adult?

- A. Each cycle lasts for approximately 35 minutes.
- B. About 60% of the night is spent in rapid eye movement (REM) sleep.
- C. Periods of rapid eye movement (REM) sleep get longer and closer together as the night progresses.
- D. Periods of Stage 4 sleep occur more often as the night progresses.

**Question 36**

Trish notices that while her husband Jonathan is sleeping, he stops breathing for short periods and then gulps air. Sometimes he wakes briefly during these times.

Jonathan is most likely suffering from

- A. hypersomnia.
- B. sleep apnea.
- C. insomnia.
- D. narcolepsy.

**Question 37**

A characteristic of rapid eye movement (REM) sleep is that

- A. the person dreams only during this stage of sleep.
- B. the brain-wave pattern resembles the pattern of an awake and alert individual.
- C. the person does not dream and the brain-wave pattern resembles that of an awake and relaxed individual.
- D. the person may be dreaming and their muscles often move.

**Question 38**

Bruce suffers from night terrors.

In which stage of sleep is he most likely to be when he has night terrors?

- A. Stage 1
- B. Stage 2–3
- C. Stage 3–4
- D. rapid eye movement (REM)

**Question 39**

The electrooculogram (EOG) detects, amplifies and records

- A. movement of the eyes.
- B. electrical activity in the muscles that are part of the iris.
- C. electrical activity in the muscles responsible for controlling eye movements.
- D. muscle tension in the muscles that are part of the iris.

**Question 40**

Consciousness is often described as being

- A. selective, continuous and changing.
- B. selective, objective and changing.
- C. selective, subjective and unchanging.
- D. selective, objective and unchanging.

**Question 41**

As a person changes from being alert to a drowsy state, the brain waves will \_\_\_\_\_ in frequency and \_\_\_\_\_ in amplitude.

- A. increase; decrease
- B. increase; increase
- C. decrease; increase
- D. decrease; decrease

**Question 42**

The galvanic skin response (GSR)

- A. measures sweat.
- B. measures body temperature.
- C. measures electrical conductivity of the skin.
- D. causes electrical conductivity on the skin.

**Question 43**

The sleep disorder characterised by tiredness during the day, a difficulty falling asleep and a consistently reduced amount of sleep is most likely

- A. hypersomnia.
- B. insomnia.
- C. sleep apnea.
- D. narcolepsy.

**Question 44**

All psychological research in Australia must

- A. avoid deception.
- B. cause long-term physiological harm.
- C. avoid any minor short-term psychological harm.
- D. be approved by an ethics committee.

**SECTION B – Short answer questions****Instructions for Section B**

Answer all questions in the spaces provided.

**AREA OF STUDY 1 – Brain and nervous system****Question 1**

Visual information is processed by the primary \_\_\_\_\_, located in the \_\_\_\_\_ lobe of the brain.

2 marks

**Question 2**

Describe two major functions of Wernicke's area.

1. \_\_\_\_\_
2. \_\_\_\_\_

2 marks

**Question 3**

Case studies are an important research tool used to study the brain. However, case studies lack control over variables.

In terms of research,

- a. why can the lack of control over variables be considered a limitation?

1 mark

- b. how can the findings from a case study be useful?

1 mark

**Question 4**

Electrical stimulation of the brain (ESB) studies are rarely used in today's society to map the location of different functions in the motor and somatosensory cortices.

- a. Explain why ESB is rarely used for this purpose.

1 mark

- b. Name an alternative method that could be used to obtain this information.

1 mark

**Question 5**

- a. The Alarm Reaction, Stage 1 of the General Adaptation Syndrome (GAS), consists of two phases: \_\_\_\_\_ and \_\_\_\_\_.

2 marks

- b. Describe the body's ability to deal with the stressor during the Alarm Reaction stage.

2 marks

**Question 6**

Elliot gets very nervous when he has to speak in public. However, his nervousness subsides as soon as he starts to speak.

After he has been speaking for five minutes,

- a. which branch of his autonomic nervous system is most active?

1 mark

- b. Elliot will experience physiological changes to his body. Describe two of these changes.

1. \_\_\_\_\_

2. \_\_\_\_\_

2 marks

AREA OF STUDY 3 – States of consciousness

Question 13

The awareness people have of themselves, others and of the world around them is commonly known as \_\_\_\_\_.

1 mark

Question 14

Andrew, a taxi driver, travels overseas and finds it difficult to sleep on an aeroplane. On a recent trip from London to Melbourne, Andrew did not sleep for 28 hours and then went straight to work.

- a. State two physical effects of sleep deprivation that might impact on Andrew's work.

1. \_\_\_\_\_

2. \_\_\_\_\_

2 marks

- b. State two psychological effects of sleep deprivation that might impact on Andrew's work.

1. \_\_\_\_\_

2. \_\_\_\_\_

2 marks

After work, Andrew went home and slept.

- c. What long-term physiological and psychological effects is Andrew most likely to experience as a result of this instance of sleep deprivation?

\_\_\_\_\_

1 mark

Question 15

Divided attention can often be successfully used when performing tasks. Give an example of how divided attention could be used to perform tasks, and clearly explain why it is possible for us to do two things at one time.

Example \_\_\_\_\_

Explanation \_\_\_\_\_

2 marks

Question 7

Nick's employer accused him of stealing, but Nick claimed he did not do it. The police asked Nick to submit to a polygraph test to see if he was lying.

The police interpreted that the polygraph results indicated that Nick was lying.

- a. Describe what the graph of the galvanic skin response (GSR) would have shown and explain why the police would have therefore assumed that Nick was lying.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2 marks

- b. Assuming Nick was innocent and that he wanted the polygraph to show his innocence, give a reason for the change in the galvanic skin response (GSR) result.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1 mark



## 2008 Assessment Report

### 2008 Psychology GA 1: Written examination 1

#### Question 16

A sleep laboratory researcher wishes to determine when a person has entered Stage 4 sleep.

- a. The brain-wave patterns predominantly found in Stage 4 sleep are \_\_\_\_\_ in frequency and \_\_\_\_\_ in amplitude. 2 marks
- b. State two other characteristics of Stage 4 sleep. 2 marks

1. \_\_\_\_\_
2. \_\_\_\_\_

#### Question 17

Doctor Finlay is carrying out research into the causes of insomnia. She selects a sample of participants and randomly divides them into two experimental groups.

- a. Name the research design Doctor Finlay is using. 1 mark
- Doctor Finlay uses a single-blind procedure.
- b. Explain the benefit of using a single-blind procedure. 1 mark

### GENERAL COMMENTS

Students generally performed well on the June 2008 Psychology examination, with results being slightly superior to those for examination 1 in previous years. As usual, the scores in the multiple-choice section were higher than those in the short answer section.

In the multiple-choice section all three Areas of Study were well answered. The mean score for both 'Visual perception' and 'Brain and nervous system' was 76 per cent. As in 2007, 'States of consciousness' was the most accurately answered section, with a mean score of 86 per cent. The mean scores for all Areas of Study were higher than in 2007.

As in previous years, students who did not perform well on the short answer section wrote answers that often lacked precision and completeness in their descriptions and definitions, failed to refer to appropriate psychological information or failed to provide appropriate examples in their answers (even when the requirement for this was explicitly stated in the question). Students had the most difficulty with 'Visual perception', with a mean score of 58 per cent, while 'Brain and nervous system' had a mean score of 64 per cent and 'States of consciousness' was the best answered Area of Study with a mean score of 68 per cent.

In general, students demonstrated good knowledge and understanding of the key concepts and skills in the study design, though it was noted that in many of the questions where a specific context was stipulated, students ignored the instruction and gave general answers that did not obtain full marks (see individual question analyses below). As in previous years, many students did not achieve full marks because they failed to address all aspects of the question in their answer. This was particularly true in Question 3, where the instruction 'In terms of research' was ignored, and Question 11, where the scenario of the 'market scene' was required. Many answers contained only generic descriptions.

Students need to read the short answer questions very carefully and then check their answers against the requirements of the question. Highlighting the **command terms** before planning a response is good practice, and can help keep answers focused.

Short answer questions worth two marks generally require two key terms and/or pieces of information. Short answer questions worth one mark generally require one, or sometimes two, key terms and/or pieces of information. Questions worth three or four marks have an appropriate number of lines in the answer booklet. It is worth noting, however, that the space provided for answers should be regarded as a guideline only and it is entirely permissible for students to write in the margins or in blank spaces on the paper as long as such writing is **clearly identified** as being an answer to a specific question.

### SPECIFIC INFORMATION

#### Section A – Multiple-choice questions

Students should answer all questions in the multiple-choice section of the paper. If they are unsure of the response, they should mark the response that is their 'best guess' – it is always possible to change a response by carefully erasing and re-shading; no marks are lost for incorrect answers. Answering all questions also decreases the chance that further answers will be out of synchronisation.

This section of the paper was very well answered with only three questions resulting in a correct response rate of less than 50 per cent. These questions are discussed below.

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Brain and nervous system					
1	3	96	1	0	
2	6	3	1	91	
3	9	15	72	4	
4	76	12	4	8	
5	73	4	22	2	
6	3	19	72	6	
7	18	3	89	10	
8	18	1	3	78	
9	16	75	7	2	
10	36	2	8	4	
11	9	81	18	12	
12	3	91	2	3	
13	5	5	9	80	
14	45	6	22	5	Saliva production is in fact inhibited in sympathetic arousal, thus option C was the only correct answer.
15	63	24	15	18	Wrong answers were fairly evenly distributed among the three incorrect options. Students who answered option B were perhaps confused as the features were the exact opposite of what would really occur in Broca's aphasia.
16	87	11	1	1	
17	4	0	92	4	
18	82	6	4	8	
Area of Study 2 – Visual perception					
19	80	2	8	10	
20	12	8	74	6	
21	7	66	17	9	
22	1	2	13	85	
23	3	12	84	1	
24	16	8	75	1	
25	83	10	4	3	
26	6	1	82	10	
27	13	77	10	0	Students showed some confusion as to the features of the Ames room.
28	48	14	8	29	
29	7	76	12	4	
30	4	3	2	91	
31	12	2	1	85	
Area of Study 3 – States of consciousness					
32	99	0	1	0	
33	1	1	97	0	
34	11	83	4	3	
35	4	8	76	11	
36	2	96	1	2	
37	11	71	4	14	
38	1	7	84	8	
39	15	2	81	2	
40	85	12	2	1	
41	12	2	79	7	
42	4	1	91	3	
43	11	86	2	1	
44	3	0	3	94	

## Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

### Area of Study 1 – Brain and nervous system

This section was generally well answered.

#### Question 1

Marks	0	1	2	Average
%	5	7	89	1.9

Visual cortex; occipital

This question was very well answered.

#### Question 2

Marks	0	1	2	Average
%	9	52	39	1.3

Wernicke's area:

- stores the receptor codes for language or enables comprehension of speech/language
- enables interpretation of the written word
- locates words from memory to express a particular meaning
- creates meaningful and/or grammatically correct speech.

Any one of the above functions gained one mark each.

#### Question 3a.

Marks	0	1	Average
%	78	22	0.2

The lack of control over the variables means (either of):

- a cause and effect relationship between variables cannot be established
- a variable other than the independent variable may influence the value of the dependent variable.

The instruction 'in terms of research' was not taken into account by many students.

#### Question 3b.

Marks	0	1	Average
%	95	5	0.1

Case studies provide detailed information about an individual or event that can be used to propose hypotheses or theories about the brain and behaviour.

The instruction 'in terms of research' was not taken into account by almost all students in this part.

#### Question 4a.

Marks	0	1	Average
%	19	82	0.8

Appropriate answers included:

- ESB is invasive
- there are risks with surgical procedures such as ESB
- ESB can only be performed on people already undergoing open brain surgery, so the sample is not representative of the population
- no two brains are exactly alike, which makes it difficult to obtain a map of the brain beforehand to avoid damaging key areas of the brain
- this is a form of case study and generalisation from case studies is low in validity
- modern advances in technology mean that there are now far more accurate methods of obtaining the same information.





## 2008 Assessment Report



One mark was awarded for any of the above responses.

Question 4b.

Marks	0	1	Average
%	24	76	0.8

Alternative methods include:

- fMRI
- PET-scan.

Question 5a.

Marks	0	1	2	Average
%	17	5	78	1.6

Shock; counter shock

Question 5b.

Marks	0	1	2	Average
%	54	15	32	0.8

In 'shock' (the first phase) the body's ability to deal with the stressor is lower than usual. In 'counter shock' (the second phase) the body's ability to resist the stressor increases to be at and then above normal level.

Marks were awarded for any response that indicated a decline in resistance followed by recovery.

Question 6a.

Marks	0	1	Average
%	20	80	0.8

Parasympathetic

No other term was acceptable.

Question 6b.

Marks	0	1	2	Average
%	26	11	63	1.4

Appropriate changes included (any two of):

- heart rate returns to normal/reduces
- breathing rate returns to normal/reduces
- release of sugar into bloodstream is minimised
- digestion of food is stimulated
- pupils constrict
- production of adrenaline/cortisol (stress hormones) is minimised.

Any other reversal of a sympathetic nervous system (physiological change) and any other reversal of a physical response to a stressor (for example, trembling hands become still, quavering voice levels out) were also accepted.

The stem of the question clearly referred to the point in time at which the parasympathetic nervous system had taken over; responses that described autonomic arousal were therefore incorrect. Responses indicating that 'after his heart rate had increased ... it then began to slow down...' were accepted.

Question 7a.

Marks	0	1	2	Average
%	16	35	49	1.3

The graph would show a higher response when Nick was asked a relevant question. It is assumed that Nick had an arousal response to the relevant question and is therefore guilty.

This question was worth two marks and there were two clear points to be made. Many responses did not indicate why the police assumed he was lying – as required by the question.

Question 7b.

Marks	0	1	Average
%	33	67	0.7

The increased emotional response may have been because of:

- anxiety
- varying temperature in the room
- illness (fluctuating body temperature).

A significant number of students incorrectly answered the question as if it asked how Nick could have created an artificial baseline level or how he could have calmed himself down so that he did not appear guilty.

### Area of Study 2 – Visual perception

Of the three Areas of Study in the short answer section, this was the area with the lowest mean. The relatively poor marks for Question 11 emphasise the need for students to apply their answers to the specific question as set. Students should not make generic statements where they are required to apply a concept.

Question 8a.

Marks	0	1	Average
%	43	57	0.6

Either of:

- Sasha's hand is close enough for each retina to view the hand at a slightly different angle. Therefore, the image of her hand is slightly different on each retina and this leads to the hand 'jumping' compared to the background (which is further away and therefore projects a similar image onto each retina)
- Sasha's eyes are about seven centimetres apart and therefore an object within seven or eight metres of the viewer will show retinal disparity.

Students were awarded the mark simply for identifying the role of retinal disparity.

Question 8b.

Marks	0	1	2	Average
%	34	45	21	0.9

Either of:

- retinal disparity: the greater the difference (or movement) of Sasha's hand between retinal images, the closer Sasha's hand is to her eyes
- convergence: the brain senses the tension in the muscles that inwardly turn the eyes to keep her hand centred in the retina of each eye. The greater the inward turning, the closer the object.

A surprising number of students named 'convergence' but then described 'accommodation'.

Question 9

Marks	0	1	2	Average
%	38	23	40	1.0

Orientation constancy is where an object appears to remain upright or in true position, despite being viewed from different angles or positions, and therefore the image having a different position on the retina. Examples include a child hanging upside down on a swing and still viewing their surroundings as the right way up, or lying on the couch to watch television and still perceiving the television as upright.

This question was not well answered because students were often unable to differentiate 'orientation constancy' from the other constancies studied.

Many students referred to 'orientation constancy' without explaining the term 'orientation' – this is a classic example of a case where a term must not be used as part of its own definition.

Question 10

Marks	0	1	2	Average
%	18	44	38	1.2

Appropriate answers included:

- similarity: if the door is similar in pattern/colour to the background, then the door and background will be perceived as belonging together as one unit
- figure-ground: the outline of the door needs to be disguised as the door is blended into the background of the wall. The door and the wall do not have a perceived contour between them.

It was essential that responses to this question showed the students' ability to apply their understanding of the Gestalt principles to the specific context given in the question. Too many students gave generic answers showing knowledge of the principles but failing to demonstrate understanding by applying them in the context as required.

Question 11

Marks	0	1	2	3	4	Average
%	25	13	25	12	25	2.0

Relative size

- The artist could draw images of similar-sized objects (for example, people and stalls) larger for them to be perceived as closer, or smaller to be perceived as more distant.
- The object is compared with other familiar objects and depth is judged based on knowledge of the size of the object and how it relates to surrounding objects. A person is known to be bigger than a stall table. Since the image of the table is bigger than the person, the person must be further away.

Height in the visual field

- More distant stalls will be shown as closer to the horizon in the picture than the closer stalls.

It was essential that responses to this question showed the students' ability to apply their understanding of the depth perception principles to the specific context given in the question. Too many students gave generic answers showing knowledge of the principles but failing to demonstrate understanding by applying them in the context as required.

Question 12

Marks	0	1	2	3	Average
%	22	12	12	54	2.0

Prior experience

- Emma-Jane may spend a lot of time around young women who dress very stylishly and therefore she is predisposed to perceiving young women.
- Kirk may spend a lot of time with his elderly grandmother and is therefore predisposed to perceiving an old woman.

The most appropriate factors to use in this response were 'previous experience' (experience or personal experience) and context. These were the most common as they are in the study design. Other possibilities included:

- motivation
- emotion
- situation
- culture
- instruction.

Many students confused 'context' and 'prior experience' – the 'Rat-Man' experiment is in fact an example of 'prior experience'

### Area of Study 3 – States of consciousness

Students appeared to have a good knowledge of this Area of Study. However, it is emphasised that students should be aware of elements that distinguish altered states of consciousness from normal waking consciousness.

Question 13

Marks	0	1	Average
%	18	82	0.8

Consciousness/state of consciousness

'Normal waking consciousness' and 'altered state of consciousness' were too specific.

Question 14a.

Marks	0	1	2	Average
%	11	29	60	1.5

Appropriate effects included (any two of):

- sleepiness
- aches and pains in body
- fatigue
- micro-sleeps
- hand tremors
- drooping eyelids
- difficulty focusing eyes
- lack of energy and strength
- slurred speech
- increased sensitivity to pain
- slower heart rate and respiratory rate
- drop in body temperature
- slower reaction time.

Marks were awarded only for physical effects.

Question 14b.

Marks	0	1	2	Average
%	10	33	57	1.5

Appropriate effects included (any two of):

- lack of concentration
- shorter attention span
- irritability/moodiness
- anxiety
- lack of motivation
- impaired memory processes
- depression
- delusions
- paranoia
- decline in ability to perform simple tasks
- irrational/illogical thinking.

Marks were awarded only for psychological effects. 'Hallucinations' was not accepted as these relate to prolonged sleep deprivation of longer duration – three days or more.

Question 14c.

Marks	0	1	Average
%	33	67	0.7

None

This was the only response required.

Question 15

Marks	0	1	2	Average
%	8	30	62	1.6

An appropriate example could be washing dishes and singing along to the radio. They can be done together because one or more of the tasks has become an automatic process (it does not need a lot of mental effort and is well practiced).

The example had to suggest two tasks, one of which was not complex. Many students referred to 'driving a car and talking on a mobile phone'. While talking is not complex, it is emphasised that research has shown that it is not possible

to perform these tasks at the same time without losing proficiency in either or both of them – even if using a hands-free phone.

Question 16a.

Marks	0	1	2	Average
%	15	6	79	1.7

Low; high

Lower and higher were also accepted.

Question 16b.

Marks	0	1	2	Average
%	19	46	35	1.2

Appropriate answers included (any two of):

- non-REM sleep
- regular (slow) heartbeat
- slow (rhythmic) respiration
- low levels of metabolic activity
- little muscle activity
- very little dreaming (bizarre and disjointed dreams)
- possible occurrence of night terrors
- it is very hard to awaken a sleeper from Stage 4 sleep.

Although sleepwalking is more likely to occur in Stage 3 of non-REM sleep, it was credited as a correct response as several textbooks do not differentiate Stages 3 and 4. Sleep talking was not accepted as this can occur during any stage of sleep.

Question 17a.

Marks	0	1	Average
%	66	34	0.4

Independent Groups

No other answer was acceptable.

Question 17b.

Marks	0	1	Average
%	57	43	0.4

Acceptable responses included either of:

- a single-blind procedure is used to avoid the effect where participants' expectations may affect the performance (placebo effect) as the participants are 'blind' as to whether they are in the control or experimental group
- if the experimenter is 'blinded', then the effects of the experimenter's expectations will be eliminated.

The key terms here were 'expectations' or 'bias'.

STUDENT NUMBER

Figures									
Words									

Letter

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## PSYCHOLOGY

### Written examination 2

Thursday 6 November 2008

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

## QUESTION AND ANSWER BOOK

### Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	44	44	44
B	22	22	46
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

### Materials supplied

- Question and answer book of 18 pages.
- Answer sheet for multiple-choice questions.

### Instructions

- Write your student number in the space provided above on this page.
- Check that your name and student number as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

### At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

## SECTION A – Multiple-choice questions

## Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best** answers the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

## AREA OF STUDY 1 – MEMORY

## Question 1

Terry has just attended a first-aid class during which he learnt a large amount of new information. He repeats this information to his mother when he gets home.

The sequence which best describes the memory process Terry used is

- A. storage; retrieval; encoding.
- B. encoding; storage; retrieval.
- C. storage; encoding; retrieval.
- D. retrieval; encoding; storage.

## Question 2

Samantha was attempting to recall the names of the students in her Year 8 class. At home she was able to remember 17 of the 26 names. Later, when she looked at an alphabetical list of **all** the students in Year 8, she found she could remember 25 of the names of the students in her class.

At home, Samantha was using \_\_\_\_\_ but when she saw the list of names, she was using \_\_\_\_\_.

- A. state dependent cues; context dependent cues
- B. context dependent cues; state dependent cues
- C. recall; recognition
- D. recognition; recall

## Question 3

The component of working memory that retrieves information from long-term memory is called the

- A. central executive.
- B. visuospatial sketchpad.
- C. phonological loop.
- D. semantic network.

## Question 4

Ben is walking along the street when a fire engine passes with its lights flashing and siren sounding.

These visual and auditory stimuli are registered first in Ben's

- A. iconic memory.
- B. working memory.
- C. echoic memory.
- D. sensory memory.

## Question 5

Sensory memory

- A. is known as working memory.
- B. is a limited capacity store that can maintain unrehearsed information for up to about 20 seconds.
- C. preserves information in its original form for less than a few seconds.
- D. is an unlimited capacity store that can hold information over lengthy periods of time.

## Question 6

Information in long-term memory is primarily stored through

- A. the visuospatial sketchpad.
- B. semantic encoding.
- C. the phonological loop.
- D. repetition.

## Question 7

Long-term memory has \_\_\_\_\_ duration and \_\_\_\_\_ capacity.

- A. limited; limited
- B. unlimited; limited
- C. limited; unlimited
- D. unlimited; unlimited

## Question 8

Farah was asked to learn a list of 20 biological terms. She was only able to recall the first 3 and the last 4 terms immediately after hearing the list.

This is most likely an illustration of

- A. the forgetting curve.
- B. the serial position effect.
- C. a lack of consolidation.
- D. a lack of context cues.

## Question 9

You find an old cabinet at a garage sale.

The component of working memory that makes the decision to buy the cabinet is the

- A. visuospatial sketchpad.
- B. semantic network.
- C. central executive.
- D. phonological loop.

## Question 10

In terms of the semantic network theory, the \_\_\_\_\_ the link between nodes, the \_\_\_\_\_ the concept is to recall when the network is activated.

- A. shorter; easier
- B. shorter; harder
- C. weaker; easier
- D. more meaningful; harder

**Question 11**

Kate's memory of how to swim is a \_\_\_\_\_ memory, whereas her memory of her first swimming race is a \_\_\_\_\_ memory.

- A. semantic; procedural
- B. procedural; episodic
- C. procedural; semantic
- D. semantic; episodic

**Question 12**

Declarative memory consists of

- A. episodic and semantic memories.
- B. semantic and procedural memories.
- C. episodic and procedural memories.
- D. echoic and iconic memories.

**Question 13**

According to the decay theory of forgetting

- A. early memories are lost because of competition from the many subsequent memories formed.
- B. the right cues for retrieval are lost over time.
- C. the rate of forgetting increases with age.
- D. a memory is lost because its physical trace fades.

**Question 14**

Proactive interference is the term used when

- A. previously learnt information makes it difficult to remember new information.
- B. new information makes it difficult to remember previously learnt information.
- C. a head injury makes it difficult to remember information learnt after the injury.
- D. a head injury causes information known before the injury to be forgotten.

**Question 15**

Arthur is giving a number of presentations to different companies this week. Each presentation consists of different material that he needs to learn. He has thoroughly revised the material for tomorrow's presentation and it is now 9.30 pm.

His best approach for remembering the material for tomorrow's presentation is to

- A. go to sleep for the rest of the night.
- B. watch his favourite TV comedy.
- C. prepare for another presentation that consists of similar material.
- D. prepare for another presentation that consists of very different material.

**Question 16**

Fred suffered a stroke.

The forgetting caused by Fred's stroke is an example of

- A. an organic cause of forgetting.
- B. motivated forgetting.
- C. decay theory.
- D. old age.

**Question 17**

Jenny had a brain injury two years ago. She now finds that although she remembers and recognises her old friends, she cannot remember people she has met since the injury.

She is most likely suffering from

- A. retrograde amnesia.
- B. retroactive interference.
- C. proactive interference.
- D. anterograde amnesia.

**Question 18**

Matilda is 75 years of age. She is fit and healthy and is not suffering from brain disease or injury.

Over the last few years, Matilda has most likely

- A. performed more poorly on recognition tasks than previously.
- B. found it difficult to learn new material.
- C. found it difficult to remember procedural memories.
- D. not experienced large memory losses.

**Question 19**

According to the forgetting curve, the rate of forgetting is typically

- A. steady over a two-week period.
- B. rapid at first, then followed by a gradual period of steady decline, and finally a stable period where little forgetting occurs.
- C. a stable period where little forgetting occurs, followed by rapid forgetting.
- D. steady for the first 20 minutes, then rapid for the next 8 hours, then a gradual period of steady decline.

**Question 20**

George taught his class how to remember key people in Australian history by visually associating each person with a landmark in the classroom.

This mnemonic technique is known as

- A. narrative chaining.
- B. an acronym.
- C. method of loci.
- D. acrostic.



**Question 3**

At the beginning of the year, a Psychology class was asked to learn the definitions of 10 terms relating to tropical plants. None of the students had a knowledge of, or interest in, tropical plants. The time it took to learn all 10 terms was noted for each student. At the end of the year these same 10 terms were presented to the students and they were asked to learn the definitions again. It was found that students learnt the definitions more quickly this time and the teacher calculated a savings score.

In this situation, define savings score and write the formula that the teacher would use to calculate the savings score.

Definition \_\_\_\_\_

Formula \_\_\_\_\_

2 marks

**Question 4**

Explain the role of echoic memory in assisting us to hear sounds as meaningful words rather than a jumble of unrelated sounds.

2 marks

**Question 5**

Describe one way that you could use **maintenance rehearsal** and two ways you could use **elaborative rehearsal** in your VCE Psychology class.

Maintenance rehearsal

1. \_\_\_\_\_

Elaborative rehearsal

1. \_\_\_\_\_

2. \_\_\_\_\_

3 marks

**Question 6**

Mark was in a serious car accident, although he was not injured. In the days following the accident, he could not help thinking about it over and over. In terms of the consolidation theory, explain why Mark is able to remember details of the accident in six weeks time.

2 marks

AREA OF STUDY 3 – RESEARCH INVESTIGATION

Read the following research study. All the questions which follow relate to this study. Answer all questions.

A researcher asked all the first year Psychology students (100 males and 100 females) from Kookaburra University to participate in a study. Students were offered extra marks in their Psychology final score if they agreed to participate.

Of the 200 students, 40 volunteered for the study (20 males and 20 females). The researcher wanted to investigate whether the memories of first year Psychology students at Kookaburra University were increased by sugar intake.

Prior to the study, informed consent was given and all participants were asked to memorise a list of 20 words (List A). They were then tested on their recall of the words.

The researcher then divided the participants into two groups. For convenience she put the 20 female volunteers into one group (Group 1 – sugar group) and the 20 male volunteers into another group (Group 2 – no sugar group).

Group 1 (sugar group) was given a drink containing sugar. Group 2 (no sugar group) was given a drink that did not contain sugar.

All participants were asked to memorise a different list of 20 words (List B). They were tested again on their recall of the words.

The mean difference in the recall of words across the two lists was calculated. The results are presented in the table below.

	Mean number of words recalled before drink consumption (List A)	Mean number of words recalled after drink consumption (List B)	Mean difference of number of words recalled before drink consumption (List A) and after drink consumption (List B)
Group 1 (sugar) N = 20	15.3	17.6	2.3
Group 2 (no sugar) N = 20	14.9	15.4	0.5

The researcher set a level of significance at 0.05.  
A test of significance was calculated and  $p < 0.05$ .  
Participants were debriefed after the study.

Question 11

Write an appropriate aim for this study.

1 mark

Question 12

Write an appropriate operational hypothesis for this study.

2 marks

Question 13

Name the independent variable and the dependent variable in this study.

Independent variable

Dependent variable

2 marks

Question 14

Identify the population and the sample in this study.

Population

Sample

2 marks

Question 15

Were the participants in this study randomly selected? Explain your answer.

1 mark

Question 16

Name the experimental research design that was used in this study.

1 mark

Question 17

What is the purpose of List A?

1 mark



## 2008 Assessment Report

### 2008 Psychology GA 3: Written Examination 2

#### Question 18

The researcher used a single-blind procedure. What does this mean for this study?

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1 mark

#### Question 19

Name and define another measure (descriptive statistic) that the researcher could calculate to help summarise the findings for each of the four sets of results.

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2 marks

#### Question 20

Was there a statistically significant difference between the two groups of participants?

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1 mark

#### Question 21

Can the results be generalised to the population? Fully explain the reasons for your answer.

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2 marks

#### Question 22

What ethical standard or consideration was breached by the researcher? Explain how it was breached.

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2 marks

### GENERAL COMMENTS

Students' overall performance on the November 2008 paper was better than November 2007. Responses to the short answer section achieved marks that were 11 percent higher than in 2007. Multiple-choice responses showed a similar increase.

In contrast to previous years, the scores in the Short answer section (mean 59% correct) were very similar in all three sections: 'Memory' (60.4%), 'Learning' (60%) and 'Research Methods' (58%). In the Multiple-choice section, scores for 'Memory' (31% correct) and 'Learning' (79% correct) were both superior to the 2007 averages, and to those of previous years.

It is noted that in this examination a total of 593 lines were left blank on the students' multiple-choice answer sheets. This is more than the number for November 2007, which indicates a negative trend. Students are encouraged to respond to each question. Not only is it impossible to achieve a mark where no response is given, but the likelihood that later answers on the computer-scored sheet will be out of synchronisation will be increased and further marks may be lost. If unsure, students are again advised to mark the response that is their 'best guess' for any question. It is always possible to change a response by carefully erasing and re-shading.

It is advised that use of a ruler, moved down the page as each question is answered, will help to ensure that the correct response line is being completed.

In the Short answer section, problems again arose in terms of failure to address command terms in questions, or failure to relate the answers to the scenario described in the question. Students appeared to have some difficulty interpreting questions and often did not gain marks due to a lack of precision in their responses. In each of the first two Areas of Study, the mean score on the Multiple-choice section was, as in previous years, substantially superior to the mean score on the equivalent Short answer section.

#### Marking Policy

As in all previous examinations, a two-mark question will usually require two pieces of information. One mark will usually be given for each part and an answer that does not address both parts cannot achieve full marks. In this examination this applied, for example, to Question 10 of Area of Study 2. In Question 15 of Area of Study 3, students were required both to state whether participants had been randomly selected and to explain this answer in a question that was worth only one mark. Students who did not complete both parts therefore could not achieve any marks.

Almost all questions requiring two parts to an answer showed two separate response spaces on the answer booklet.

This examination contained several questions in which students were required to answer with respect to a certain theory, context or scenario. This applied to Questions 2, 3, 5, 6, 7, 8a, 8b, 9a, 9b, and 9c, in the first two Areas of Study. Similarly, all questions in Area of Study 3 must have been answered with reference to the research study described, as stated in the instructions on the examination paper. Generic answers do not show clear understanding and cannot gain full marks.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
<b>Area of Study 1 – Memory</b>					
1	2	89	6	3	
2	2	1	94	3	
3	75	1	5	19	
4	2	4	2	91	
5	7	10	80	3	
6	3	83	5	9	
7	1	3	8	88	
8	4	94	1	1	
9	12	7	79	3	
10	90	8	2	1	
11	1	92	4	3	
12	78	6	11	5	
13	4	14	8	74	
14	76	21	2	1	
15	86	1	8	5	
16	95	2	3	0	
17	8	2	2	88	
18	9	24	6	61	24% of students chose option B, which would have been a correct response if the question had not clearly stated that this was a healthy elderly person. The inability to learn new material is one of the early signs of dementia.
19	1	84	4	11	
20	5	1	93	1	
21	4	0	93	2	23% of students chose option D, indicating that students should learn inequality signs carefully.
22	68	8	23	2	
<b>Area of Study 2 – Learning</b>					
23	77	10	7	6	
24	6	8	9	77	
25	5	74	3	18	
26	4	10	3	83	
27	89	5	3	3	
28	6	88	1	5	
29	20	2	75	3	
30	1	12	2	84	Options A and B were both accepted as correct answers. If 'having fun' was considered to lead to 'feeling happy', then 'having fun' was the unconditioned stimulus. If 'having fun' was the result of 'making scores', then it was the unconditioned response.
31	24	80	6	11	

Question	% A	% B	% C	% D	Comments
32	10	22	15	52	Option A – taste aversion can be important for survival, whereas classical conditioning is not. This is obviously an incorrect response. Option B – taste aversion is an active process, whereas classical conditioning is passive. The learning process is passive in both taste aversion and classical conditioning. Option C – taste aversion will become extinct after only one trial without the unconditioned stimulus, whereas classical conditioning requires repeated trials. Taste aversion is, in fact, very resistant to extinction. Option D – taste aversion can involve a lengthy time lapse between the unconditioned stimulus and the unconditioned response, whereas classical conditioning usually involves a very short time lapse.
33	2	1	91	6	
34	3	12	3	81	
35	66	5	17	12	
36	9	81	5	6	
37	7	3	16	74	
38	1	14	83	2	
39	19	1	72	7	
40	89	6	3	3	
41	74	5	19	2	
42	2	1	17	81	
43	4	93	1	2	
44	5	70	12	13	

Responses to Questions 37 to 39 showed that students had difficulty in discriminating the work of Thorndike from the work of Skinner.

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Memory

Question 1

Marks	0	1	2	Average
%	4	11	85	1.8

Typically the capacity of short-term memory is in the range of  $7 \pm 2$  (5–9) items of information. Any range (that is, spread of 2 or more) between 4 and 10 was allowed. In short-term memory, grouping individual items of information together and remembering them as a group is known as chunking.

In a single word answer such as this, other words were not permitted to be substituted for the correct term.

Question 2

Marks	0	1	2	Average
%	7	11	18	64
				2.4

Group A would be expected to remember the most events from the film because:

- they would have been assisted by being in the same context as when they saw the film (they had context-dependent cues to assist them). 'Context cues' was a key term in this answer
- it is easier to recognise events from a list than recall them without help (recognition versus recall). The term 'recognition' was a key term in this answer.

# 2008 Assessment Report

## Question 3

Marks	0	1	2	Average
%	49	35	15	0.7

Definition: Savings score = Amount of time saved when information about the tropical plants is relearned

Formula:  $\frac{\text{Time taken to learn definitions the first time} - \text{time taken the second time}}{\text{Time taken the first time}} \times 100$

One mark each was awarded for the definition and the formula. 'Trials' did not receive a mark because the question specifically referred to 'time' in the scenario given.

## Question 4

Marks	0	1	2	Average
%	43	35	23	0.8

Both of:

- echoic memory stores impressions of sound for 3-4 seconds for each impression to slightly overlap the next
- 3-4 seconds is long enough for us to be able to link impressions of sound with the next syllable or word we hear, so when we pay attention to them (to transfer them to short-term memory) we are able to make sense of the sounds as a word or the words as a sentence.

OR

This acts as a filter because if the duration was longer, the words would start to overlap and be 'jumbled up' when we paid attention to them.

Few students identified the filter function of echoic memory.

## Question 5

Marks	0	1	2	3	Average
%	13	10	28	49	2.1

Maintenance rehearsal

- repeat notes from the board (sub-vocally) to retain them while you write them down
- repeat a definition over and over again to remember it

Elaborative rehearsal

- link information to a personal experience or personal situation
- ask a question about the information
- create visual images, for example, mind-mapping
- use a mnemonic to add meaning to the information
- think about the meaning of the information

One mark was awarded for each example. Students were asked to give one example of maintenance rehearsal and two examples of elaborative rehearsal. Two marks were also awarded for two separate and different mnemonics.

## Question 6

Marks	0	1	2	Average
%	41	42	17	0.8

- Transfer of information from short-term memory (STM) to long-term memory (LTM) requires a period of consolidation for permanent storage to occur, as neuronal (physical/chemical/biological, etc.) changes occur (according to consolidation theory). Memory may be lost if this consolidation is disrupted. The concept of neuronal change (or memory trace formation) was critical in this response.
- As Mark kept thinking about the accident and his consolidation of the memory was not disrupted by injury, it is likely that this memory of the accident passed into his LTM. It was important that students identified that the memory was stored in LTM.

# 2008 Assessment Report

One mark was awarded for each of the above points.

Despite the emphasis in the question, many students answered this question as if Mark had been unable to remember details of the accident. Obviously such responses could not earn marks.

## Area of Study 2 – Learning

### Question 7

Marks	0	1	2	Average
%	35	37	29	1

- A fixed action pattern is instinctive but usually involves a complex sequence of responses – a reflex action is a simple response to a stimulus.
- The same reflex action (for example, blinking at a puff of air on the eyeball) may be shown by many different species of animal – fixed action pattern is species specific.

Students achieved two marks for clearly outlining the difference. They needed to clearly state the difference between the two actions, not merely give a vague definition of each or a difference without noting which action is which.

### Question 8a.

Marks	0	1	2	3	Average
%	6	17	20	58	2.3

8ai.

Punishment (or response cost)

8aii.

Positive reinforcement

8aiii.

Negative reinforcement

### Question 8b.

Marks	0	1	2	Average
%	12	20	68	1.6

- He is more likely to repeat the same behavior (sending Gayle to her room and letting Luke play with the toy).
- This will probably occur after a shorter amount of arguing between his children.
- This will occur because a negative stimulus (the noise) has been removed as a result of his actions, making it more likely that he will repeat the behaviour.

Both parts of this response were required for full marks.

Many students wrote responses indicating that next time he would send Luke to his room – presumably to be fair. In terms of operant conditioning this would be an incorrect response as he is likely to repeat the exact behaviour that brought the desired response.

### Question 9a.

Marks	0	1	Average
%	38	62	0.6

Classical conditioning.

James has started to take sick days to avoid the anxiety. The number of sick days he has taken in the last couple of months has increased. Eventually James telephones his workplace to say he is sick and will not be at work for a week.

### Question 9b.

Marks	0	1	2	Average
%	16	18	66	1.5



# 2008 Assessment Report



Both of:

- negative reinforcement
- the anxiety is removed when he does not go to work (negatively reinforcing the behaviour of not going to work and making it more likely that he will repeat this behavior.)

Question 9c.

Marks	0	1	2	Average
%	44	13	43	1

Both of:

- no
- as extinction of the conditioned response of anxiety did not occur.

For extinction to occur, the conditioned stimulus (CS) (arriving at work) must no longer cause the conditioned response (CR) (anxiety due to arriving at work). Spontaneous recovery is the reappearance of the CR after extinction.

Question 10

Marks	0	1	2	Average
%	58	25	17	0.6

Any appropriate example that illustrated the role of motivation was accepted, including (but not limited to):

- performing a slam dunk in basketball after watching an NBL match
- washing up after dinner having seen your sister being praised for doing so
- putting maple syrup on a pancake after seeing your brother enjoying it.

Motivation needed to be clearly explained. A person is unlikely to reproduce an observed behaviour unless they want to do so. (Motivation is often linked to reinforcement – if you believe reproducing the behaviour will produce positive consequences, then you are more likely to carry it out.)

Motivation must be shown to be the desire to perform the action. Reference to reinforcement was not enough to earn the mark unless it was shown to create this specific desire.

Many students gave examples of motivation to learn, not motivation to perform the behaviour. These answers did not earn marks as this is not the way the term 'motivation' is used in observational learning.

One mark was awarded for the appropriate example that illustrated observational learning. One mark was awarded for a clear explanation of the process of motivation as it related to this example.

## Area of Study 3 – Research Investigation

Question 11

Marks	0	1	Average
%	8	92	0.9

To discover the effects of sugar intake on learning ability

Question 12

Marks	0	1	2	Average
%	34	46	20	0.9

For first year psychology students from Kookaburra University, learning ability – operationalised as the score on a memory test of 20 words – will be more improved for students who consume a sugary drink than for students who have a drink containing no sugar.

An operational hypothesis is a stated prediction of the outcome of the experiment that includes:

- statement of the population
- statement of the independent variable (IV)
- statement of the dependent variable (DV)
- operationalisation of the dependent variable.

# 2008 Assessment Report

If the independent variable was also continuous, then it would also be operationalised.

A correct response included appropriate operationalisation of the dependent variable and statement of the population, the independent variable and dependent variable.

This question was poorly answered. Students needed to demonstrate their understanding of the concept of operationalisation and their understanding that a hypothesis is a statement of the predicted effect of a change in the independent variable on the value of the dependent variable. A hypothesis cannot be expressed as a question; some students continue to make this error.

Question 13

Marks	0	1	2	Average
%	21	23	56	1.4

- Independent variable: Whether the participants drank a sugary drink or not.
- Dependent variable: Learning ability (or memory) is operationalised as the score on the 20 word test.

OR

Change in learning ability

As this part of the question was worth only one mark, 'learning ability', 'memory' or 'improvement in memory/learning ability' were accepted, although they are not strictly complete answers.

Question 14

Marks	0	1	2	Average
%	32	23	40	1.1

- Population: All first year psychology students from Kookaburra University.
- Sample: The 40 students (20 male and 20 female) who volunteered to take part in the study.

It was not necessary to repeat the reference to the specific university in the description of the sample, as long as it was identified in the description of the population. Many students wrongly identified 'all first year psychology students' or 'students' as the population. The answer needed to contain all identifying details.

Question 15

Marks	0	1	Average
%	33	67	0.7

No. The students were 40 volunteers from the population. This biased the sample towards those who were willing to take part.

Both parts of the response were needed to achieve one mark.

Question 16

Marks	0	1	Average
%	49	51	0.5

Independent groups

Many students wrongly answered 'repeated measures'. This was probably a misinterpretation of the design in which all participants had been tested on word lists on two occasions, so that the change in ability could be measured.

Question 17

Marks	0	1	Average
%	38	62	0.6

To establish a base-line for comparison with the post-drink score, so that change in learning ability could be measured.

Question 18

Marks	0	1	Average
%	32	68	0.7

The participants were not aware of whether they were in the experimental (sugar drink) group or the control (non-sugar drink) group.

Question 19

Marks	0	1	2	Average
%	49	16	35	0.9

- Median: The score that has as many scores above it as below it in the dataset.
- Mode: The most commonly occurring score in the dataset.
- Standard deviation: The mean difference between each score and the mean of all scores.
- Correlation: A scatterplot showing scores on List A compared with scores on List B.

Any other appropriate descriptive statistic was acceptable, for example, variance, range, interquartile range, kurtosis and skew.

Question 20

Marks	0	1	Average
%	23	77	0.8

Yes

Question 21

Marks	0	1	2	Average
%	27	29	43	1.2

No

- Participants were not randomly allocated to groups. With all males in one group and all females in the other, the results were confounded by gender.
- Participants were not representative of the population as all had volunteered.

Any good reason was accepted.

Question 22

Marks	0	1	2	Average
%	34	26	40	1.1

Professional conduct or voluntary participation. The participants were coerced into taking part by being given extra marks for their participation.

Withdrawal Rights. There is no evidence that participants were informed of their rights to leave the experiment at any stage or to have their results eliminated after the completion of the research. This was accepted as correct, though withdrawal rights should be covered in the informed consent procedures that were carried out.